

[0056] The jet nozzles 311, 313, 330, and 340 may wash dishes by jetting washing water at a high pressure. The jet nozzles 311, 313, 330, and 340 may include an upper rotating nozzle 311 provided on top of the washing tub 30, an intermediate rotating nozzle 313 provided at the center of the washing tub 30, and fixed nozzles 330 and 340 provided at bottom of the washing tub 30.

[0057] The upper rotating nozzle 311 may be provided above the upper basket 12a and may jet washing water downward while rotating due to water pressure. For this, jet holes 312 may be provided at a bottom end of the upper rotating nozzle 311. The upper rotating nozzle 311 may directly jet washing water toward dishes stored in the upper basket 12a.

[0058] The intermediate rotating nozzle 313 may be provided between the upper basket 12a and the lower basket 12b and may jet washing water upward and downward while rotating due to water pressure. For this, the jet holes 314 may be provided at a top end and a bottom end of the intermediate rotating nozzle 313. The intermediate rotating nozzle 313 may directly jet washing water toward dishes stored in the upper basket 12a and the lower basket 12b.

[0059] The fixed nozzles 330 and 340 are provided not to move and be fixed to one side of the washing tub 30 unlike the rotating nozzles 311 and 313. The fixed nozzles 330 and 340 may be disposed approximately adjacent to the rear wall 32 of the washing tub 30 and may jet washing water toward a front of the washing tub 30. Accordingly, the washing water jetted from the fixed nozzles 330 and 340 may not directly face dishes.

[0060] The washing water jetted from the fixed nozzles 330 and 340 may be deflected by the vane 400 toward dishes. The fixed nozzles 330 and 340 may be disposed below the lower basket 12b, and the vane 400 may deflect the washing water jetted from the fixed nozzles 330 and 340 upward. That is, the washing water jetted from the fixed nozzles 330 and 340 may be deflected by the vane 400, toward dishes stored in the basket 12b.

[0061] The fixed nozzles 330 and 340 may include a plurality of jet holes 331 and 341 arranged on the left and right of the washing tub 30, respectively. The plurality of jet holes 331 and 341 may jet washing water forward.

[0062] The vane 400 may extend left and right of the washing tub 30 to deflect all of the washing water jetted from the plurality of jet holes 331 and 341 of the fixed nozzles 330 and 340. That is, one longitudinal end of the vane 400 may be provided to be adjacent to the left wall 33 of the washing tub 30, and another longitudinal end of the vane 400 may be provided to be adjacent to the right wall 34.

[0063] The vane 400 may linearly reciprocate along a jet direction of the washing water jetted from the fixed nozzles 330 and 340. That is, the vane 400 may linearly reciprocate along a front-and-rear direction of the washing tub 30.

[0064] Accordingly, a linear jet structure including the fixed nozzles 330 and 340 and the vane described above may wash the whole area of the washing tub 30 without a blind spot. It is differentiated from rotating nozzles capable of jetting washing water only in a range limited by the rotation radius thereof.

[0065] The fixed nozzles 330 and 340 may include a left fixed nozzle 330 disposed on the left of the washing tub 30 and a right fixed nozzle 340 disposed on the right of the washing tub 30.

[0066] The rotating nozzles 311 and 313 and the fixed nozzles 330 and 340 may independently jet washing water from each other, which will be described. In addition, the left fixed nozzle 330 and the right fixed nozzle 340 may also independently jet washing water.

[0067] The washing water jetted from the left fixed nozzle 330 may be deflected by the vane 400 only to an area on the left of the washing tub 30, and the washing water jetted from the right fixed nozzle 340 may be deflected by the vane 400 only to an area on the right of the washing tub 30.

[0068] Accordingly, the dish washing machine 1 may independently and separately wash left side and right side of the washing tub 30. Unlike the embodiment, it may not only be divided into left and right but also be further subdivided as necessary.

[0069] Also, in the dish washing machine according to an embodiment, a rotary type jet structure is applied to upper and intermediate nozzles and a linear type jet structure is applied to a lower nozzle. It is irrelevant to the concept of the disclosure whether a jet structure is a rotary type or a linear type, and the concept of the disclosure may be applied regardless of the jet structure.

[0070] Main components of the dish washing machine 1 according to an embodiment of the disclosure described above will be sequentially described below.

[0071] FIG. 3 is a view illustrating a flow channel structure of the dish washing machine 1.

[0072] Referring to FIG. 3, an operation, a flow channel structure, a fixed nozzle assembly structure 300, and a washing water distribution structure of the dish washing machine according to an embodiment of the disclosure will be described.

[0073] The dish washing machine may include a water supply operation, a washing operation, a draining operation, and a drying operation.

[0074] In the water supply operation, washing water may be supplied to the washing tub 30 through a water supply pipe (not shown). The washing water supplied to the washing tub 30 may flow to the sump 100 provided at a bottom of the washing tub 30 due to a gradient of the bottom plate 35 of the washing tub 30 and may be stored in the sump 100.

[0075] In the washing operation, the pump 200 is operated to pump the washing water of the sump 100. The washing water pumped by the pump 200 may be distributed to the rotating nozzles 311 and 313, the left fixed nozzle 330, and the right fixed nozzle 340 through a distributor 250. The washing water may be jetted to wash dishes from the jet nozzles 311, 313, 330, and 340 at a high pressure due to pumping force of the pump 200.

[0076] Here, the upper rotating nozzle 311 may receive washing water from the pump 200 through a first hose 271a. The intermediate rotating nozzle 313 may receive washing water from the distributor 250 through a second hose 271b. The left fixed nozzle 330 may receive washing water from the distributor 250 through a third hose 271c. The right fixed nozzle 340 may receive washing water from the pump 200 through a fourth hose 271d.

[0077] In the embodiment, it has been generally described that the pump 200 includes three distribution modes. However, the pump 200 is not limited to the number of modes described above and may be configured to include various number of distribution modes depending on a motor shaft rotation angle, the number of rotations, etc.